Aeronautic Sound Shield to Reduce Noise Pollution

Researchers at NASA's Armstrong Flight Research Center have patented a low-cost sound shield capable of reducing the noise of aircraft traveling at subsonic speed. The technology injects a high–molecular weight gas onto the aircraft surface, producing a local area of supersonic flow. This blocks sound waves traveling in all directions without diminishing aircraft performance or efficiency. The aeronautic sound shield represents an important advance over other techniques previously used to suppress aircraft noise. Although techniques such as attaching physical barriers to the aircraft or injecting gases into the jet engine exhaust may decrease noise levels, they also typically reduce aerodynamic performance. Furthermore, these methods rarely address "upstream" noise produced by the leading edge of the aircraft. Armstrong's sound shield also reduces wear and fatigue of aircraft components and offers a low-cost design.

Benefits

- **Reduces noise pollution:** Armstrong's sound shield suppresses noise emanating in all directions, dramatically decreasing noise pollution.
- **Increases longevity of aircraft components:** By suppressing sound waves, the shield decreases wear and fatigue on aircraft components.
- **Aerodynamically advanced:** Unlike currently available technologies, Armstrong's sound shield does not hinder aerodynamic efficiency or performance.

Applications

- Commercial aircraft
- High-speed rail
- Gas turbines

Patent

Armstrong has one patent issued (U.S. Patent No: 7,407,131→) for this technology.

Commercial Opportunity

This technology is part of NASA's technology transfer program. The program seeks to stimulate development of commercial uses of NASA-developed technologies. NASA is flexible in its agreements, and opportunities exist for licensing and joint development. Armstrong is interested in a partnership to commercialize this technology.

Contact Information

If you would like more information about this technology or about NASA's technology transfer program, please contact:

Technology Transfer Office
NASA's Armstrong Flight Research Center
PO Box 273, M/S 1100
Edwards, CA 93523-0273
Phone: (661) 276-3368
E-mail: DFRC-TTO@mail.nasa.gov